

CLAIMS:

1. An isolated DNA molecule comprising a nucleotide sequence encoding the genome of ovine adenovirus (OAV287) substantially as shown in Figure 1 or a functionally equivalent nucleic acid sequence.
2. The DNA molecule as claimed in claim 1 such that the nucleic acid sequence encoding the genome of the ovine adenovirus is substantially as shown in Figure 1.
3. An isolated DNA molecule comprising a nucleic acid sequence encoding the genome of ovine adenovirus (OAV287) substantially as shown in Figure 1 wherein a portion of the adenoviral genome not essential for the maintenance or viability of the native adenovirus is deleted or altered.
4. An isolated DNA molecule comprising at least a 15 nucleic acid base sequence being substantially unique to the ovine adenovirus (OAV287) nucleic acid sequence as shown in Figure 1.
5. The DNA molecule as claimed in claim 4 such that the at least 15 nucleic acid base sequence encodes a functional element of ovine adenovirus (OAV287).
6. The DNA molecule as claimed in claim 5 such that the functional element is selected from the group consisting of promoter, gene, inverted terminal repeat, viral packaging signal and RNA processing signal.
7. The DNA molecule as claimed in claim 6 such that the functional element is the inverted terminal repeat having the nucleic acid base sequence 1 to 46 as shown in Figure 1.
8. ^{claim 1} A plasmid including the DNA molecule as claimed in ~~any one of claims 1 to 7.~~
9. ^{claim 2} A plasmid including the DNA molecule as claimed in ~~any one of claims 1 to 3~~ such that the nucleic acid sequence encoding the adenovirus genome or a portion thereof is linked to a nucleic acid sequence encoding an origin of replication and a further nucleic acid sequence encoding a marker.

10. The plasmid as claimed in claim 9 such that nucleic acid sequences encoding inverted terminal repeats of the adenovirus are joined.

11. The plasmid as claimed in claim 9 ~~or 10~~ such that the nucleic acid sequence encoding the marker encodes for resistance to an antimicrobial agent.

12. A viral vector comprising a DNA molecule including a nucleic acid sequence encoding the genome of ovine adenovirus (OAV287) substantially as shown in Figure 1 or a functionally equivalent nucleic acid sequence or a portion thereof and at least one nucleic acid sequence encoding a non-adenoviral polypeptide or polypeptides.

13. The viral vector as claimed in claim 12 such that the nucleic acid sequence encoding the genome of the adenovirus is substantially as shown in Figure 1.

14. A viral vector comprising a DNA molecule including a nucleic acid sequence encoding the genome of ovine adenovirus (OAV287) substantially as shown in Figure 1 wherein a portion of the adenoviral genome not essential for the maintenance or viability of the native adenovirus is deleted or altered, and at least one nucleic acid sequence encoding a non-adenoviral polypeptide or polypeptides.

15. The viral vector as claimed in ^{claim 12} ~~any one of claims 12 to 14~~ such that the nucleic acid sequence encoding the polypeptide or polypeptides encodes a polypeptide or polypeptides derived from bacteria, viruses, parasites or eukaryotes.

16. The viral vector as claimed in claim 15 such that non-adenoviral polypeptide is rotavirus VP7sc antigen, the parasite polypeptide is *Trichostrongylus colubriformis* 17kD antigen, the *Taenia ovis* 45W antigen or the PM95 antigen from *Lucilia cuprina*.

17. A method of delivering a DNA molecule having a nucleic acid sequence encoding a non-adenoviral polypeptide or polypeptides to a target cell, the method

comprising infecting the target cell with a viral vector as claimed in any one of ^{claims (7)} claims 12 to 16 such that the DNA molecule encoding the polypeptide or polypeptides is expressed and the polypeptide or polypeptides is produced by the target cell.

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Sub C¹ 18. A method for delivering a DNA molecule having a nucleic acid sequence encoding a non-adenoviral polypeptide or polypeptides to an animal, the method comprising administering to the animal a viral vector as
10 claimed in any one of claims 12 to 16, such that the viral vector infects at least one cell of the animal and the infected cell expresses the DNA molecule encoding the polypeptide or polypeptides and produces the polypeptide or polypeptides.

15 19. The method as claimed in claim 18 such that the animal is a grazing animal.

20. The method as claimed in claim 19 such that the grazing animal is a sheep.

21. A viral vector comprising a DNA molecule including a
20 nucleic acid sequence encoding the genome of ovine adenovirus (OAV287) substantially as shown in Figure 1 or a functionally equivalent nucleic acid sequence or a portion thereof and at least one nucleic acid sequence encoding a functional RNA molecule.

25 22. The viral vector as claimed in claim 21 such that the functional RNA molecule is an antisense RNA molecule or ribozyme.

Sub C² 23. A method for delivering a DNA molecule having a
30 nucleic acid sequence encoding a functional RNA molecule to an animal, the method comprising administering to the animal a viral vector as claimed in claim 21 or 22, such that the viral vector infects at least one cell of the animal and the infected cell expresses the DNA molecule encoding the functional RNA molecule and produces the RNA
35 molecule.

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